

ABSTRACTReference Circuit Implemented to Reduce the Degradation of Reference Capacitors Providing Reference Voltages for 1T1C FeRAM Devices

5

A semiconductor memory comprises a first capacitor for storing digital data connecting a cell plate line to a first bit-line through a first select transistor. The first select transistor is activated through a connection to a word line. At least one reference capacitor provides a reference voltage to a reference bit-line. A

10 sense amplifier connected to the first and reference bit-lines measures a differential read signal on the first and reference bit-lines. A toggle flip flop alternately changes the polarization of charge stored on the reference capacitors.

15